

Notice of Allowability

Application No.

10/816,560

Applicant(s)

WANG ET AL.

Examiner

Art Unit

Rodney G. McDonald

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 9-5-07.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |



RODNEY G. MCDONALD
PRIMARY EXAMINER

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Claims 1-12 are indicated as being allowable over the prior art because the prior art of record does not teach ionizing a sputtered material; and applying a first and a second bias voltage to a first and a second region of a substrate of a micro-electromechanical system (MEMS) to form a first and a second layer of a first and a second film stack of a first and a second film bulk acoustic resonators filter of the MEMS for a first and a second frequency band respectively, the first and second layers having first and second desired thicknesses, and the first and second bias voltages being applied in accordance with at least the first and second desired thicknesses, respectively.

Claims 13-17 are indicated as being allowable over the prior art because the prior art of record does not teach forming a first and a second layer of a first and a second film stack of a first and a second film bulk acoustic resonators filter for a first and a second frequency band, respectively, at a first point in time, for a micro-electromechanical system (MEMS), the first and second layers having a first and a second thicknesses respectively; ionizing a sputtered material; and applying a first and a second bias voltage to a first and a second region of a substrate of the MEMS to form a third and a fourth layer of the first and second film stacks, on top of the first and second layers, respectively, at a second point in time, subsequent to said first point in time, the third and fourth layers having third and fourth desired thicknesses, and the first

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and second bias voltages being applied in accordance with at least the first and second desired thicknesses.


The closest prior art of record to Pryor (U.S. Pat. 5,091,208) while teaching applying two separate biases to two different regions of a substrate holder fails to teach ionizing a sputtered material; and applying a first and a second bias voltage to a first and a second region of a substrate of a micro-electromechanical system (MEMS) to form a first and a second layer of a first and a second film stack of a first and a second film bulk acoustic resonators filter of the MEMS for a first and a second frequency band respectively, the first and second layers having first and second desired thicknesses, and the first and second bias voltages being applied in accordance with at least the first and second desired thicknesses, respectively. Furthermore Pryor also fails to teach forming a first and a second layer of a first and a second film stack of a first and a second film bulk acoustic resonators filter for a first and a second frequency band, respectively, at a first point in time, for a micro-electromechanical system (MEMS), the first and second layers having a first and a second thicknesses respectively; ionizing a sputtered material; and applying a first and a second bias voltage to a first and a second region of a substrate of the MEMS to form a third and a fourth layer of the first and second film stacks, on top of the first and second layers, respectively, at a second point in time, subsequent to said first point in time, the third and fourth layers having third and fourth desired thicknesses, and the first and second bias voltages being applied in accordance with at least the first and second desired thicknesses.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M-TH with every Friday off..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Rodney G. McDonald
Primary Examiner
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RM
September 17, 2007